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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,783	12/20/2001	Henricus Franciscus Johannus Jacobus Van Tongeren	NL 000766	3215

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,783

Applicant(s)

VAN TONGEREN ET AL.

Examiner

Peter J. Macchiarolo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10,11,13,14,17 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10,11,13,14,17 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

The reply filed on November 24, 2003 consists of changes to the specification, drawings and to the claims, and further, the reply consists of remarks related to the prior rejection of claims in the previous Office Action. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. The above have been entered and considered. However, pending claims 1, 4-8, 10, 11, 13, 14, 17, and 21-28 are not allowable as explained below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hu et al (USPN 5846666: "Hu").

Regarding claim 1, Hu discloses in the abstract and in column 12 line 64 to column 13 line 35, an organic EL device comprising a substrate, an organic EL layer on the substrate; an electrode atop the EL layer on the substrate, the electrode comprising a metal (indium) inherently having a melting point of 250°C or less. Hu further discloses in column 14, lines 30-31 that the electrode is 5µm thick.

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Regarding claims 4, 5, and 14, Hu discloses that the electrode supplies electrons to the EL layer and has a work function of 4eV. Further, the Examiner notes that indium inherently has a work function of about 4.12eV.

Regarding claim 8, the Examiner notes that the limitation, "a battery operated or hand-held electronic device provided with the EL device of claim" is an intended use type limitation. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case, the preamble has been considered, however is not patentable over Hu since using a battery operated or hand held electronic device with the EL device of claim 1 is an obvious configuration.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu in view of previously cited Yudasaka et al (USPN 6541918; "Yudasaka").

Regarding claim 6, Hu teaches the limitations addressed in rejected claim 1 and will not be repeated here, but is silent to a relief pattern.

However, Yudasaka teaches that relief patterns (step cutting insulating films) improve the accuracy and precision of a material on a surface when using an ink-jet manufacturing method, which in turn improves the overall quality of an EL device.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the device Hu with the relief patterns of Yudasaka to improve the overall quality of the device.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu in view of previously cited Sturm et al (USPN 6087196; "Strum").

Regarding claims 7, Hu is silent to the device being a passive matrix type including one or more EL layers sandwiched between row electrodes and column electrodes, and independently addressable EL elements being formed at crossings of row and column electrodes;

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and the row electrodes comprise a metal or metal alloy, but does infer this configuration in column 1, line 31 to column 4 line 12.

Furthermore, this configuration is well-known in the art to produce a more robust and diverse display, as evidenced by Strum.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Hu with the above configuration to allow for a more robust display.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al (USPN 6053791; "Fujii").

Regarding claim 10, Fujii discloses in EXAMPLE 3 a method for manufacturing an EL device including a metal electrode provided in accordance with a desired pattern comprising forming one or more layers of EL material on a surface and subsequently ink-jet printing molten metal in accordance with the desired pattern such that upon cooling of the molten metal; the metal electrode is formed atop the one or more layers of organic EL material.

Fujii is silent to the EL layer being organic.

However, modifying Fujii's EL layer to an organic EL layer would have been obvious to one of ordinary skill in the art, since organic phosphors have a variety of advantages over inorganic phosphors. For example, organic phosphors can be manufactured thinner and less expensive than inorganic phosphors.

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Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture Fujii's device by ink jet printing electrodes on an organic EL layer to allow for a thinner and less expensive device.

Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii in further view of previously cited Yudasaka et al (USPN 6541918; "Yudasaka").

Regarding claim 11, Fujii is silent to a relief pattern formed on the surface.

However, Yudasaka teaches that relief patterns (step cutting insulating films) improve the accuracy and precision of a material on a surface when using an ink-jet manufacturing method, which intern improves the overall quality of an EL device.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the device of Fujii with the relief patterns of Yudasaka to improve the overall quality of the device.

Regarding claim 21, Fujii are silent to a relief pattern.

However, Yudasaka teaches that the relief patterns are formed by photolithography, indicating that they are made from a photoresist material.

The motivation and reasons for combining are the same as for claim 11.

Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii in view of Hu.

Regarding claim 13, Fujii is silent to the material for the ink-jetted electrode.

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However, Hu teaches that an indium electrode (melting point of 156°C) allows for reduced voltage and required power.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fujii with indium.

Regarding claim 22, although Hu's indium electrode does not fall in the range of 60-150°C, it is noted that the inclusion of a metal with a melting point below 150°C is not shown to solve any problems or yield any unexpected results that are not within the scope of Hu's in view of Fujii's device. Accordingly, the inclusion of a metal or metal alloy having a melting point between 60 and 150°C is considered to be an obvious matter of design choice.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fujii and Hu with a metal or metal alloy having a melting point between 60 and 150°C, since this is an obvious matter of design choice which one of ordinary skill in the art would arrive at for a variety of reasons, including material availability and specific thermal requirements of a particular ink-jet manufacturing machine.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii, in further view of Sturm.

Regarding claim 17, Fujii is silent to the device being a passive matrix type including one or more EL layers sandwiched between row electrodes and column electrodes, and

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independently addressable EL elements being formed at crossings of row and column electrodes; and the row electrodes comprise a meal or metal alloy.

However, as is known in the art, Strum shows this configuration allows for a more robust device.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fujii with the above configuration to allow for a more robust display.

Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable Fujii in further view of Applicant's admitted prior art.

Regarding claims 23 and 26, Fujii are silent to ink-jet printing a selection layer on the surface.

However, as Applicant admits in the paragraph spanning pages 13 and 14, such selection layers and inks used for manufacturing these layers are known.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to ink-jet a selection layer onto the device of Fujii since the selection layer will increase the accuracy of the electrode's position and ink-jetting is a method that allows for very quick and accurate application over a large area.

Regarding claims 24 and 27, printing the selection layer on the surface using an other pattern that is complementary to the desired pattern is an obvious modification, since one skilled

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in the art will recognize the selection layer will not interfere with the electrode's overall resistance thereby simplifying electrical power calculations.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture a selection layer on Fujii's surface using an other pattern that is complementary to the desired pattern to simplify electrical power calculations.

Regarding claims 25 and 28, as Applicant admits in the first full paragraph of page 14, using a selection layer that comprises a photoresist layer is known in the art.

The motivation and reasons for combining are the same as for claim 23 above.

Furthermore, since the Examiner agrees with Applicant's argument filed 04/21/2005 that claims 23-25 are not distinct and independent, the Examiner asserts such methods would have been obvious to one skilled in the art.

Response to Arguments

Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Ito et al (USPN 5652067; "Ito") is evidence that organic phosphors can be manufactured thinner and less expensive than inorganic phosphors.

Applicant's amendment filed 04/21/2005 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

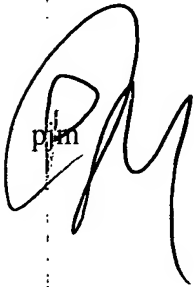

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'Joseph Williams', with a small 'pjm' stamp or mark near the bottom left of the signature.

JOSEPH WILLIAMS
PRIMARY EXAMINER